We claim:

1. A surgical device comprising:

first and second grasping arms extending from a pivot section, said first and second grasping arms being resiliently mounted to the pivot section to allow closure of the grasping arms, said first and second grasping arms each having a distal end with a grasping face, said grasping face on each grasping arm aligned to meet the grasping face of the other grasping arm upon closure of the grasping arms;

a resistive heating element disposed upon the grasping face of the first grasping arm so that it lies between the grasping face of the first grasping arm and the grasping face of the second grasping arm upon closure of the grasping arms, said resistive heating element being operably connected to a source of electrical power; and

a thermally conductive plate disposed between the resistive heating element and the grasping face of the first grasping arm.

2. The device of claim 1 wherein the plate is 0.065 to .100 inches wide.

3. The device of claim 1 further comprising an electrically insulative layer disposed between the resistive heating element and the plate.

4. The device of claim 3 wherein the electrically insulative layer comprises a coating on the thermally conductive plate.

5. The device of claim 3 wherein the thermally conductive plate comprises a metal and the electrically insulative layer comprises an oxide of the metal.

6. The device of claim 1 wherein the thermally conductive plate and electrically insulative layer comprise an anodized metal plate.

7. The device of claim 1 wherein the thermally conductive plate comprises a thermally conductivity ceramic.

8. The device of claim 1 wherein the thermally conductive plate comprises a plastic incorporating a high thermal conductivity metal or ceramic.

9. The device of claim 1 wherein the thermally conductive plate is arcuate relative to the transverse cross section of the grasping arms.

10. The device of claim 1, wherein the grasping face of the first grasping arm is substantially convex and the plate is substantially semi-cylindrical.

11. The device of claim 1, wherein the first grasping arm is substantially cylindrical and the plate is substantially semi-cylindrical.

12. The device of claim 1 further comprising:

a resilient surface on the grasping face of the first grasping arm, between the thermally conductive plate and the grasping face of the arm.

13. The device of claim 1 further comprising:

a thermally insulative surface on the grasping face of the first grasping arm, between the thermally conductive plate and the grasping face of the arm.

14. The device of claim 1 further comprising:

a sleeve covering the distal end of the first grasping arm, thereby forming a thermally insulative surface on the grasping face of the second grasping arm.

15. The device of claim 1 further comprising:

a resilient sleeve covering the distal end of the second grasping arm, thereby forming a resilient surface on the grasping face of the second grasping arm.

16. The device of claim 1 further comprising:

a resilient surface on the grasping face of each of the first and second grasping arms.

17. The device of claim 1 further comprising:

a sleeve covering the distal end of the first grasping arm, thereby forming a surface on the grasping face of the first grasping arm, between the wire and the grasping face of the arm, and

a resilient sleeve covering the distal end of the second grasping arm, thereby forming a resilient surface on the grasping face of the second grasping arm.

18. The device of claim 1 wherein the grasping arms and pivot section comprise a pair of tweezers.

19. The device of claim 1 wherein the grasping arms and pivot section comprise a forceps.

20. The device of claim 1 wherein the grasping arms and pivot section are mounted on a rod adapted for insertion into the body through a laparoscopic access port, and said device further comprises a handle section operably connected to the pivot section and grasping arms for remotely operating the grasping faces within the body.

21. A medical device comprising:

a pair of tweezers characterized by a first arm and a second arm, each of said arm having a proximal end and distal end, said first arm having a first gripping face disposed on the distal end thereof, said second arm having second gripping face disposed on the distal end thereof, said gripping faces being defining surfaces generally perpendicular to a plane defined by the grasping arms, said surfaces being movable into apposition with each other upon closing of the tweezers;

a first layer of resilient material disposed on the gripping face of the first arm;

a second layer of resilient material disposed on the gripping face of the second arm;

a resistive heating element disposed between of the first and second layers of resilient material so as to be trapped between the gripping faces of the first and second arm upon closing of the tweezers; and

a thermally conductive plate disposed between the resistive heating element and a gripping face of the first arm.

22. The device of claim 9 wherein the plate is 0.065 to .100 inches wide.

23. The device of claim 22 further comprising an electrically insulative layer disposed between the resistive heating element and the plate.

24. The device of claim 23 wherein the electrically insulative layer comprises a coating on the thermally conductive plate.

25. The device of claim 23 wherein the thermally conductive plate comprises a metal and the electrically insulative layer comprises an oxide of the metal.

26. The device of claim 23 wherein the thermally conductive plate and electrically insulative layer comprise an anodized metal plate.

27. The device of claim 21 wherein the thermally conductive plate comprises a thermally conductivity ceramic.

28. The device of claim 21 wherein the thermally conductive plate comprises a plastic incorporating a high thermal conductivity metal or ceramic.

29. The device of claim 21 wherein the thermally conductive plate is arcuate relative to the transverse cross section of the grasping arms.

30. The device of claim 21, wherein the grasping face of the first grasping arm is substantially convex and the plate is substantially semi-cylindrical.

31. The device of claim 21, wherein the first grasping arm is substantially cylindrical and the plate is substantially semi-cylindrical.

32. The device of claim 21 further comprising:

a sleeve covering the distal end of the first grasping arm, thereby forming a thermally insulative surface on the grasping face of the second grasping arm.

33. The device of claim 21 further comprising:

a resilient sleeve covering the distal end of the second grasping arm, thereby forming a resilient surface on the grasping face of the second grasping arm.

34. The device of claim 21 further comprising:

a resilient surface on the grasping face of each of the first and second grasping arms.

35. The device of claim 21 further comprising:

a sleeve covering the distal end of the first grasping arm, thereby forming a surface on the grasping face of the first grasping arm, between the wire and the grasping face of the arm, and

a resilient sleeve covering the distal end of the second grasping arm, thereby forming a resilient surface on the grasping face of the second grasping arm.

36. A medical device comprising:

a pair of forceps characterized by a first arm and a second arm, each of said arms having a proximal end and distal end, each of said arms being rotatably fixed to the other at a midpoint thereof, said first arm having a first gripping face disposed on the distal end thereof, said second arm having second gripping face disposed on the

distal end thereof, said gripping faces being defining surfaces generally perpendicular to a plane defined by the grasping arms, said surfaces being movable into apposition with each other upon closing of the forceps;

a first layer of resilient material disposed on the gripping face of the first arm;

a second layer of resilient material disposed on the gripping face of the second arm;

a resistive heating element disposed between of the first and second layers of resilient material so as to be trapped between the gripping faces of the first and second arm upon closing of the forceps and

a thermally conductive plate disposed between the resistive heating element and the gripping face of the first arm.

37. The device of claim 36 wherein the plate is 0.065 to .100 inches wide.

38. The device of claim 36 further comprising an electrically insulative layer disposed between the resistive heating element and the plate.

39. The device of claim 38 wherein the electrically insulative layer comprises a coating on the thermally conductive plate.

40. The device of claim 38 wherein the thermally conductive plate comprises a metal and the electrically insulative layer comprises an oxide of the metal.

41. The device of claim 38 wherein the thermally conductive plate and electrically insulative layer comprise an anodized metal plate.

42. The device of claim 36 wherein the thermally conductive plate comprises a thermally conductivity ceramic.

43. The device of claim 36 wherein the thermally conductive plate comprises a plastic incorporating a high thermal conductivity metal or ceramic.

44. The device of claim 36 wherein the thermally conductive plate is arcuate relative to the transverse cross section of the grasping arms.

45. The device of claim 36, wherein the grasping face of the first grasping arm is substantially convex and the plate is substantially semi-cylindrical.

46. The device of claim 36, wherein the first grasping arm is substantially cylindrical and the plate is substantially semi-cylindrical.

47. The device of claim 36 further comprising:

a sleeve covering the distal end of the first grasping arm, thereby forming a thermally insulative surface on the grasping face of the second grasping arm.

48. The device of claim 36 further comprising:

a resilient sleeve covering the distal end of the second grasping arm, thereby forming a resilient surface on the grasping face of the second grasping arm.

49. The device of claim 36 further comprising:

a resilient surface on the grasping face of each of the first and second grasping arms.

50. The device of claim 36 further comprising:

a sleeve covering the distal end of the first grasping arm, thereby forming a surface on the grasping face of the first grasping arm, between the wire and the grasping face of the arm, and

a resilient sleeve covering the distal end of the second grasping arm, thereby forming a resilient surface on the grasping face of the second grasping arm.

51. A medical device comprising:

a laparoscopic grasper characterized by a first arm and a second arm, each of said arm having a proximal end and distal end, each of said arm being rotatably relative to the other about a point near the distal end thereof, said arms being adapted to be inserted into the body and to be rotatably opened and closed upon each other within the body, said first arm having a first gripping face disposed on the distal end thereof, said second arm having second gripping face disposed on the distal end thereof, said gripping faces being defining surfaces generally perpendicular to a plane defined by the grasping arms, said surfaces being movable into apposition with each other upon closing of the graspers;

a first layer of resilient material disposed on the gripping face of the first arm;

a second layer of resilient material disposed on the gripping face of the second arm;

a wire disposed between of the first and second layers of resilient material so as to be trapped between the gripping faces of the first and second arm upon closing of the graspers and

a thermally conductive plate disposed between the resistive heating element and the gripping face of the first arm.

52. The device of claim 51 wherein the plate is 0.065 to .100 inches wide.

53. The device of claim 51 further comprising an electrically insulative layer disposed between the resistive heating element and the plate.

54. The device of claim 53 wherein the electrically insulative layer comprises a coating on the thermally conductive plate.

55. The device of claim 53 wherein the thermally conductive plate comprises a metal and the electrically insulative layer comprises an oxide of the metal.

56. The device of claim 53 wherein the thermally conductive plate and electrically insulative layer comprise an anodized metal plate.

57. The device of claim 51 wherein the thermally conductive plate comprises a thermally conductivity ceramic.

58. The device of claim 51 wherein the thermally conductive plate comprises a plastic incorporating a high thermal conductivity metal or ceramic.

59. The device of claim 51 wherein the thermally conductive plate is arcuate relative to the transverse cross section of the grasping arms.

60. The device of claim 51, wherein the grasping face of the first grasping arm is substantially convex and the plate is substantially semi-cylindrical.

60. The device of claim 51, wherein the first grasping arm is substantially cylindrical and the plate is substantially semi-cylindrical.

61. The device of claim 51 further comprising:

a sleeve covering the distal end of the first grasping arm, thereby forming a thermally insulative surface on the grasping face of the second grasping arm.

62. The device of claim 51 further comprising:

a resilient sleeve covering the distal end of the second grasping arm, thereby forming a resilient surface on the grasping face of the second grasping arm.

63. The device of claim 51 further comprising:

a resilient surface on the grasping face of each of the first and second grasping arms.

64. The device of claim 51 further comprising:

a sleeve covering the distal end of the first grasping arm, thereby forming a surface on the grasping face of the first grasping arm, between the wire and the grasping face of the arm, and

a resilient sleeve covering the distal end of the second grasping arm, thereby forming a resilient surface on the grasping face of the second grasping arm.

65. A surgical instrument comprising two oppositely-positioned grasping arms each having a grasping face, wherein at least one grasping arm has an resistive heating element thereon, the electrically resistant heating element being operable to divide

and seal body tissue, and a thermally conductive plate disposed between the resistive heating element and the grasping face of the grasping arm.

66. The device of claim 65 wherein the plate is 0.065 to .100 inches wide.

67. The device of claim 65 further comprising an electrically insulative layer disposed between the resistive heating element and the plate.

68. The device of claim 3 wherein the electrically insulative layer comprises a coating on the thermally conductive plate.

69. The device of claim 3 wherein the thermally conductive plate comprises a metal and the electrically insulative layer comprises an oxide of the metal.

70. The device of claim 65 wherein the thermally conductive plate and electrically insulative layer comprise an anodized metal plate.

71. The device of claim 65 wherein the thermally conductive plate comprises a thermally conductivity ceramic.

72. The device of claim 65 wherein the thermally conductive plate comprises a plastic incorporating a high thermal conductivity metal or ceramic.

73. The device of claim 65 wherein the thermally conductive plate is arcuate relative to the transverse cross section of the grasping arms.

74. The device of claim 65, wherein the grasping face of the first grasping arm is substantially convex and the plate is substantially semi-cylindrical.

75. The device of claim 65, wherein the first grasping arm is substantially cylindrical and the plate is substantially semi-cylindrical.

76. The device of claim 65 further comprising a resilient surface on the grasping face of the first grasping arm, between the thermally conductive plate and the grasping face of the arm.

77. The device of claim 65 further comprising a thermally insulative surface on the grasping face of the first grasping arm, between the thermally conductive plate and the grasping face of the arm.

78. The device of claim 65 further comprising a sleeve covering the distal end of the first grasping arm, thereby forming a thermally insulative surface on the grasping face of the second grasping arm.

79. The device of claim 65 further comprising a resilient sleeve covering the distal end of the second grasping arm, thereby forming a resilient surface on the grasping face of the second grasping arm.

80. The device of claim 65 further comprising a resilient surface on the grasping face of each of the first and second grasping arms.

81. The device of claim 65 further comprising a sleeve covering the distal end of the first grasping arm, thereby forming a surface on the grasping face of the first grasping arm, between the wire and the grasping face of the arm, and

82. a resilient sleeve covering the distal end of the second grasping arm, thereby forming a resilient surface on the grasping face of the second grasping arm.

83. The device of claim 65 wherein the grasping arms and pivot section comprise a pair of tweezers.

84. The device of claim 65 wherein the grasping arms and pivot section comprise a forceps.

85. The device of claim 65 wherein the grasping arms and pivot section are mounted on a rod adapted for insertion into the body through a laparoscopic access port, and said device further comprises a handle section operably connected to the pivot section and grasping arms for remotely operating the grasping faces within the body.

86. The surgical instrument of claim 65, wherein the electrically resistant heating element is adapted to heat tissue without passing current through the tissue.

87. The surgical instrument of claim 65, wherein the electrically resistant heating element is adapted to heat tissue without relying on ohmic heating of the tissue.

88. The surgical instrument of claim 65, wherein the heating element has an ohmic resistance lower than the ohmic resistance of body tissue.

89. The surgical instrument of claim 65, wherein the heating element comprises an electrically resistant wire.

90. The surgical instrument of claim 65, wherein an operative area of the heating element is electrically insulated from at least one of the grasping arms.

91. The surgical instrument of claim 65, wherein an operative area of the heating element is electrically insulated from the working surface of at least one of the grasping arms.

92. The surgical instrument of claim 65, further comprising an insulator between an operative area of the heating element and at least one of the grasping arms.

93. The surgical instrument of claim 65, wherein the heating element is thermally insulated from the grasping arms.

94. The surgical instrument of claim 65, wherein the heating element is adapted both to seal and to cut tissue.

95. The surgical instrument of claim 65, wherein the instrument is adapted to cut tissue adjacent to the heating element and to seal tissue on either side of the heating element.

96. The surgical instrument of claim 65, wherein the grasping arms are electrically insulated from one another.

97. The surgical instrument of claim 65, further comprising a heating element actuator that is responsive to a pre-determined pressure to activate the heating element.

98. The surgical instrument of claim 65, wherein the heating element and the opposing working surfaces apply pressure on tissue positioned between the grasping arms as the device is closed.

99. The surgical instrument of claim 65, wherein at least one of the working surfaces comprises a non-stick material.

100. The surgical instrument of claim 65, wherein at least one of the working surfaces is textured.

101. The surgical instrument of claim 92, wherein the insulator evens out the pressure on the tissue disposed between the grasping arms.

102. The surgical instrument of claim 92, wherein the insulator comprises a sleeve at the distal end of one or both grasping arms.

103. The surgical instrument of claim 92, wherein the insulator comprises a non-stick polymeric material.

104. The surgical instrument of claim 92, wherein the insulator prevents heat dissipation and focuses heat on the tissue disposed therebetween.

105. The surgical instrument of claim 65, wherein the heating element uses one of the grasping arms as an electrical conductor.

106. The surgical instrument of claim 65, wherein the heating element loops around the distal end of the grasping arm.